

**THAT WHICH IS CLAIMED IS:**

1. An audio amplifier device comprising:  
a power supply including an output for  
providing a supply voltage;

a voltage divider connected to the output of  
5 said power supply for providing a divided supply  
voltage;

an audio amplifier comprising a supply  
voltage rejection circuit and including a first input  
for receiving an input audio signal, a second input for  
10 receiving the supply voltage, a third input for  
receiving a supply voltage rejection signal for said  
supply voltage rejection circuit, and an output for  
providing an output audio signal; and

a speaker connected to the output of said  
15 audio amplifier; and

a power-off noise suppression circuit having  
a first input for receiving the divided supply voltage  
and an output for providing the supply voltage  
rejection signal, said power-off noise suppression  
20 circuit setting the supply voltage rejection signal  
equal to the divided supply voltage during power-off of  
said power supply so that a rate of decrease of the  
supply voltage is greater than a rate of decrease of  
the supply voltage rejection signal for reducing noise  
25 in the output audio signal during the power-off.

2. An audio amplifier device according to  
Claim 1 wherein said supply voltage rejection circuit  
comprises at least one transistor having a conducting  
voltage; and wherein the rate of decrease of the supply  
5 voltage is greater than the rate of decrease of the  
supply voltage rejection signal by at least the  
conducting voltage.

5 circuit is configured as a voltage follower.

circuit comprises:

the supply voltage rejection signal; and

supply voltage.

said switch.

Claim 5 wherein said bias circuit comprises a resistor.

Claim 4 wherein said switch comprises a transistor.

8. An audio amplifier device according to Claim 7 wherein said switch comprises an NPN transistor.

9. An audio amplifier device according to Claim 4 wherein said pair of first and second transistors each comprises a PNP transistor.

10. An audio amplifier device according to Claim 1 wherein said audio amplifier is a Class B amplifier.

11. An audio amplifier device comprising:  
an audio amplifier comprising a supply voltage rejection circuit and including a first input for receiving an input audio signal, a second input for receiving a supply voltage, a third input for receiving a supply voltage rejection signal for said supply voltage rejection circuit, and an output for providing an output audio signal; and  
a power-off noise suppression circuit having  
10 a first input for receiving a divided supply voltage, an output for providing the supply voltage rejection signal, and a second input connected to the output so that said power-off noise suppression circuit is configured as a voltage follower, said power-off noise  
15 suppression circuit setting the supply voltage rejection signal equal to the divided supply voltage during power-off so that a rate of decrease of the supply voltage is greater than a rate of decrease of the supply voltage rejection signal for reducing noise  
20 in the output audio signal during the power-off.

12. An audio amplifier device according to Claim 11 further comprising:

a power supply including an output for providing the supply voltage; and

a voltage divider connected to the output of said power supply for providing the divided supply voltage.

13. An audio amplifier device according to Claim 11 further comprising a speaker connected to the output of said audio amplifier.

14. An audio amplifier device according to Claim 11 wherein said supply voltage rejection circuit comprises at least one transistor having a conducting voltage; and wherein the rate of decrease of the supply voltage is greater than the rate of decrease of the supply voltage rejection signal by at least the conducting voltage.

15. An audio amplifier device according to Claim 11 wherein said power-off noise suppression circuit comprises:

a pair of first and second transistors each comprising a first conduction terminal for receiving the supply voltage, said first transistor comprising a control terminal connected to the first input of said power-off noise suppression circuit and said second transistor comprising a control terminal connected to the third input of said audio amplifier for providing the supply voltage rejection signal; and

a switch connected to said pair of first and second transistors and being operated when the divided supply voltage is greater than the supply voltage rejection signal during power-off so that the supply voltage rejection signal is set equal to the divided supply voltage.

16. An audio amplifier device according to Claim 15 wherein said power-off noise suppression circuit further comprises a bias circuit connected to said switch.

17. An audio amplifier device according to Claim 6 wherein said bias circuit comprises a resistor.

18. An audio amplifier device according to Claim 15 wherein said switch comprises a transistor.

19. An audio amplifier device according to Claim 18 wherein said switch comprises an NPN transistor.

20. An audio amplifier device according to Claim 15 wherein said pair of first and second transistors each comprises a PNP transistor.

21. An audio amplifier device according to Claim 11 wherein said audio amplifier is a Class B amplifier.

22. A method for reducing noise in an output audio signal during power-off of an audio amplifier device comprising an audio amplifier and a supply voltage rejection circuit, the audio amplifier device  
5 including a first input for receiving an input audio signal, a second input for receiving a supply voltage, a third input for receiving a supply voltage rejection signal for the supply voltage rejection circuit, and an output for providing the output audio signal, the  
10 method comprising:  
turning off the power supply for powering-off the audio amplifier device;

dividing the supply voltage into a divided supply voltage; and

setting the supply voltage rejection signal equal to the divided supply voltage during power-off so  
5 that a rate of decrease of the supply voltage is greater than a rate of decrease of the supply voltage rejection signal.

23. A method according to Claim 22 wherein the supply voltage rejection circuit comprises at least one transistor having a conducting voltage; and wherein the rate of decrease of the supply voltage is greater than the rate of decrease of the supply voltage rejection signal by at least the conducting voltage.

24. A method according to Claim 22 wherein setting the supply voltage rejection signal equal to the divided supply voltage during power-off is performed using a power-off noise suppression circuit  
5 that includes a first input receiving the divided supply voltage, an output providing the supply voltage rejection signal, and a second input connected to the output so that the power-off noise suppression circuit is configured as a voltage follower.

25. A method according to Claim 24 wherein the power-off noise suppression circuit comprises:

a pair of first and second transistors each comprising a first conduction terminal connected to the  
5 power supply, the first transistor comprising a control terminal connected to the first input of the power-off noise suppression circuit and the second transistor comprising a control terminal connected to the third input of the audio amplifier for providing the supply  
10 voltage rejection signal; and

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26. A method according to Claim 25 further comprising biasing the switch.

27. A method according to Claim 25 wherein the switch comprises a transistor.

28. A method according to Claim 22 wherein the audio amplifier is a Class B amplifier.